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ABSTRACT

The purpose of the computerized Reading Program Management System is to assist reading specialists of the District Heights Elementary School (Maryland) to perform four specific reading program tasks: placement, grouping, monitoring, and materials supply. The system uses a general purpose, commercial data management software package called DB Master, Version Four. It permits the user to create, store, and edit a large number of records; to manipulate the data stored in the records; and to produce reports from the data. The user needs to have little or no knowledge of programing. The reading specialist needs current information that relates to the individual student, the school's grouping and organizational patterns, and the school's materials needs and their availability. Data that can then be entered into the system include (1) student identifying information, (2) student test scores, (3) student participation in one or more special school programs that provide supplementary reading instruction, and (4) enrollment information along with an indication of whether the student is considered transient according to school system criteria. The file is then ready to be searched for single items of information or for complex combinations of data, such as a variety of hard-copy reports. (HOD)

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MANAGING AN ELEMENTARY SCHOOL READING PROGRAM: HOW A MICROCOMPUTER CAN HELP

by Edith Einhorn

Paper presented at the Second Annual Eastern States Conference, Computers & Reading/Learning Difficulties, Washington, D.C., April 12,13, 1985.

1. Introduction

The Reading Program Management System described in this paper was designed for and implemented in the District Heights Elementary School in Prince George's County, Maryland. The school is located in an urban setting and has many of the problems associated with inner city schools. It has an enrollment of approximately 400 students in grades one through six with an additional 100 kindergartners. The staff includes 16 classroom teachers, two full-time special education resource teachers, a full-time reading specialist, a part-time speech pathologist, and seven para-professional aides, all of whom are concerned with providing direct instruction to students in reading and ancillary skills.

One of the major functions of the reading specialist in the District Heights Elementary School is coordinator and manager of the school's reading program. Specific management tasks include:

1. Assisting in establishing school-wide goals.

2. Assisting in developing an on-going reading program for every student, including program modification where indicated.

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This involves working with the principal, regular class room teachers, special teachers, and aides.

3. Assisting in grouping and scheduling students for instruction within one class, cross-class or cross-grade.

4. Assisting in ordering materials of instruction.

5. Assisting in involving parents in the reading program.

6. Maintaining a reading program record keeping system which encompasses all aspects of the program.

7. Providing information regarding all aspects of the program including information regarding the reading instruction of individual students to the principal, supervisors, classroom teachers, special teachers, and parents.

The computerized Reading Program Managment System provides easy and rapid access to the information necessary for effective decision making while at the same time it unburdens the reading specialist from the time-consuming tangle of paperwork usually associated with managing the reading program.

2. Purpose of the Management System

The purpose of the Reading Program Management System is to assist the District Heights Elementary School's reading specialist to perform four specific reading program management tasks: (1) placement, (2) grouping, (3) monitoring, and (4) materials supply. Although the school provides a balanced reading program which includes instruction in study skills, content area and functional reading, literature appreciation,

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and the encouragement of reading as a leisure-time activity, the greatest proportion of the program is developmental reading instruction utilizing two commercial reading basal programs. For this reason, these four management tasks revolve around the basal programs.

Placement refers to the matching of individual students to appropriate basal levels and materials of instruction within instructional groups. Grouping refers to dividing students within one class, one grade or among several grades, so that teachers can provide grouped instruction. Considerations in grouping for instruction include the size of each group, the number of groups in each class, and the total number of students in each class.

Monitoring refers to insuring that students progress in developing and applying reading skills at ever increasing levels, as evidenced by their continual progression through the basal materials. It also includes seeing that they continue to be matched to appropriate instructional groups.

Materials supply refers to the efficient procurement and distribution of basal instructional materials. Sufficient materials should be available when needed; however, unneeded materials should not be stockpiled and then remain unused.

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3. Design of the Management System

a. Hardware and Software: The Reading Program Management System was designed to run on an Apple IIe microcomputer with two disk drives, a monitor and a printer. Although the System will run with only one disk drive, it will be very awkward and require much disk swapping, a time-consuming procedure. A printer is necessary in order to be able to produce hard-copy reports.

The Reading Program Management System was designed utilizing a general purpose, commercial data management software package called DB Master, Version Four. It permits the user to create, store and edit a large number of records, to manipulate the data stored in the records and to produce reports from the data. The user needs to have little or no knowledge of programming.

b. Information Needs and Data Entry: The reading specialist needs current information relative to: (1) the individual student, (2) the school's grouping and organizational patterns, and (3) the school's materials needs and their availability. The first category of information represents input, i.e., information that is entered into the system. The latter two categories represent output, i.e., information that is made available by the system. The information entered into the Reading Program Management System describes each student's reading instructional needs and services being received. Each data item represents a separate field in the student's record.

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Individual student data is sorted to provide the other two needed categories of information.

In order to use DB Master, a file is created. A file consists of all the records in the system. A record is a form into which data has been entered. The District Heights Elementary School reading file consists of 400 records, one for each student in grades one through six. A form is made up of fields. Each field holds a discrete piece of information. The DHES reading file form has twenty-four fields (see Figure 1).

The first set of data entered in each student's record is identifying information:

1. Name: the student's name is entered last name, first name, to enable alphabetization by last name.

2. Grade: this is entered as a single number, 1-6.

3. Sex: this field is entered as either B (boy) or G (girl).

4. Homeroom Teacher: the information in this field is entered in code (the teacher's initials) to minimize typing; in reports, the teacher's full name is printed out.

The second set of data describes the reading instruction being received by the student:

5. Reading Level: a decimal number indicates the level of the basal text currently being used by the student. For example, a text level 2-1 (for the first half of second grade) is shown as 2; a 2-2 text (for the second half of second grade) is shown as 2.5.

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Figure 1

DATA ENTRY FORM

NAME _____

GRADE __ SEX __ HR TEACHER ____

READING LEVEL ___ LA TEACHER ____

STARTING BK ____ MAGAZINE __

CURRENT BK ____ MAGAZINE __

TAG __ SL/RD __ RR __ SP __ CH1 __

CAI __ COMPUTER LIT __ COMPUTER ASP ___

ENROLLMENT _____

TRANSIENT __ READING STATUS ____

COMMENT1 _____

COMMENT2 _____

AUTO DATE __-__-__

6. Language Arts Teacher: this field indicates the teacher providing the reading instruction and is coded in the same way as field number 4.

7. Starting Book: this field refers to the title of the basal text with which the student started the current school year. The data are coded to minimize typing during data entry. The whole title is printed out in reports.

8. Magazine: the basal texts are divided into sections called magazines. The data in this field indicate in which section of the text the student began instruction in the current school year.

9-10. Current Book and Magazine: these fields show the current basal text and section being used by the student. They are entered in the same way as fields 7 and 8.

Student progress is ascertained through the use of criterion-referenced mastery tests. The current basal text and magazine fields are then updated. A comparison of fields 9 and 10 with fields 7 and 8 permits easy monitoring of the student's progress through the basal part of the reading program during the current school year.

The third set of data indicates whether the student is participating in one or more special school programs which provide supplementary reading instruction These are: classes for talented and gifted students (TAG); instruction provided within the regular education classroom for students with specific language/reading development needs (SL/RD); special

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education resource room instruction for students identified as handicapped under the provisions of PL94-142: Education for All Handicapped Act (RR); speech and/or language therapy (SP); assistance to educationally deprived students as provided for in Chapter I of the Education Consolidation and Improvement Act (ECIA) of 1981 (CH1); computer assisted instruction (CAI); computer literacy instruction; and a computer afterschool program (ASP). Fields 11-18 accept a Y (for yes) if the student is participating and are otherwise left blank.

The school in which the Reading Program Management System is being implemented has a high rate of student mobility (56% in the 1983-84 school year). For this reason, the fourth set of data includes enrollment information along with an indication of whether the student is considered transient according to school system criteria. These criteria state that a student in grades 1 through 3 who has been in two or more previous schools and a student in grades 4 through 6 who has been in three or more previous schools have a high rate of mobility and are a high risk for possible reading disabilities.

19. Enrollment: this field is for the date of entry of a student into the school and the immediate previous school or school system.

20. Transient: a Y (for yes) entry in this field indicates that a student is considered to be transient.

The last set of data is general information:

21. Reading Status: this is a computed field which

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indicates the student's reading level compared to grade placement. It is derived by the formula: grade level (field number 2) minus reading level (field number 5). The reading status is automatically computed by the software program. It changes automatically whenever a change is made in either field number 2 or field number 5.

22-23. Comment1 and Comment2: these fields are to be used for general information.

24. Auto-date: this field is automatically entered by the software program. It shows the date when the record was last edited.

The reading file data entry form was designed in a way to make data entry convenient. For this reason, it is contained on one screen page. This is not a requirement of the software program. It is possible to spread the form over several screen pages and to have as many as one hundred fields in a file.

4. Editing the File

New records can be added to the file (for new students entering the school) by calling up a blank form and entering the pertinent information. In the same way, records of students leaving the school can be deleted, so that the file is kept current. Individual student records can be kept current by editing them. This is done by calling up a student's record and entering new data. For example, the reading level might be upgraded and the current book changed as the student progresses

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through the basal program. The reading status automatically changes and the updated record is stored again in the file. The District Heights Elementary School reading file requires between one half- and one hour each week of editing to keep it current.

5. Information Output: Searches and Reports

Once the reading file is created, it is ready to be searched for single items of information or for complex combinations of data. Information can be obtained either on the monitor screen or, through the software's report generator, on hard-copy, i.e., printed on paper.

The term "search" refers to information obtained by manipulating the data in the file and reading the output on the monitor screen. The term "report" refers to information obtained by manipulating the data and presenting it in an organized fashion on hard-copy.

a. Searches: The simplest searches are those the reading specialist conducts for information regarding a student's reading program and to monitor the student's progress. This is done by calling the student's record up from the file and reading it on the screen. (The student's entire record can be printed in hard-copy form.) A comparison of the "starting book" and "current book" fields indicates immediately whether the student has progressed within the basal reading program during the school year, and how much progress has been made to

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date. If little progress is apparent, the reading specialist can make some inferences regarding the cause by checking the "special programs," "enrollment," and "transient" fields.

A two-criteria search is conducted to yield the records of all of the students in a particular instructional group. The search criteria specify the language arts teacher and the current book. Another two-criteria search, specifying the grade level and current book, yields the records of all the students at a particular grade level reading in a specific book regardless of the instructional group or teacher.

When a new student enters the school, reading instructional needs are diagnosed and a level in the basal program is determined. The reading specialist may search the file to find which teachers have an instructional group appropriate for the student. If there is more than one group, a computer count is used to find the number of students in each group and the total number of students in each class. These factors are considered in determining the best placement for the student.

Searches are conducted by the reading specialist to answer a variety of questions regarding grouping and organizational patterns. The answers to these questions make possible informed decisions regarding organizational changes in the school. They assist the reading specialist in fulfilling the role of providing resource services to the school's staff and administration. The following are examples of questions easily answered by computer searches.

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1. How many students are there in each homeroom class?; in each language arts class?

2. How many students in one class are reading a particular basal text?; how many in one grade are reading that text?; how many in the school?

3. How many students in a particular class are receiving Chapter 1 services? who are they?

4. How many transient students are enrolled in the school?

5. How many students in grades four through six receiving special education services are reading two or more years below grade level?

To insure that there is an adequate but not over-supply of materials available, the reading specialist needs to know the exact amount of each item available in the school. The school's inventory is then compared with the school's needs. Current needs are determined by a simple search of the reading file to find how many students throughout the school are reading each book. Future needs are anticipated by making an educated guess about how soon a particular instructional group will complete its current book and be ready for the next one in the series. The section of the book in which the group is currently working helps to estimate the amount of time needed for completion. This information also tells the reading specialist when and how much of these materials will be available for another group's needs. This helps to avoid wasteful stockpiling of unused materials in anticipation of need.

When the reading specialist needs to estimate materials needs for the next year, the file is searched for the exact number of each title currently being used. Assuming that each student will be ready for the next level book dur_ng the next year, a reasonably accurate estimated need is determined.

b. Reports: A variety of hard-copy reports are generated throughout the year. Each report shows the date on which it is printed. While most of the reports contain information specific to the reading program, one is of general use. This is a simple class list. Every student is assigned to a homeroom teacher and such assignments are entered into the reading file. A search is then conducted to find all the students who are assigned to a particular teacher. Instead of sending the information to the monitor screen, however, the report is printed on paper. The students' names are listed in alphabetical order and numbered consecutively. The search is repeated for each teacher. As changes are made in the class organization, and because of the transiency rate in the implementation school these changes are many and frequent, the file is updated and a new report is printed. The new report automatically inserts new names in alphabetical order, deletes names of dropped students, and renumbers the list.

At the beginning of each school year, the reading specialist gives each teacher a class list which contains for each student the reading basal text and section in which

instruction is to begin. It also lists the special school programs in which the student is participating. This list is later revised to show the current book.

As soon as students are grouped for instruction, a reading instructional groups report is generated for each teacher. This report lists the students in a particular teacher's language arts class. It is divided into instructional groups labeled with the book and section. It shows each student's grade placement, homeroom teacher and special school programs. The students' names are listed alphabetically and are numbered consecutively within each group. Page breaks put each instructional group on a new page. This report is reprinted periodically as changes occur in individual class organizational patterns. (See Figure 2.)

A report is generated for each of the special school programs. This report lists the names of the participating students, the grade placement, homeroom teacher and reading basal text. A copy of this report is given to the specialist involved with the particular program. (See Figure 3.)

Midway through the school year, and again toward the end of the year, a report is generated that shows every student's progress through the basal reading program. It lists all the students in the school alphabetically by grade and teacher. It shows the reading basal text the student started with at the beginning of the school year and the student's current text. (See Figure 4.)

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A school status report is generated at the end of the school year. This report shows the reading basal placement of every student in the school. It is organized by grade and by basal texts within each grade. This report is used to organize the next year's classes and to confirm that adequate instructional materials are available.

6. Suggestions for Adapting to Other Elementary Schools

a. Choosing the Hardware: The minimal hardware system necessary to implement the Reading Program Management System consists of a computer, a monitor, at least one disk drive though two are strongly recommended, and a printer. The memory capacity of the computer must be large enough to run the chosen software.

b. Choosing the Software: It is assumed that the reading specialist is not a computer programmer and does not have the resources to have a custom-made program developed. Therefore, an all-purpose data management program will be utilized. The program should have the capacity to storage the needed number of records and the needed number of fields for each record.

The number of records will be equal to the school's student enrollment. To determine needed capacity, at least 100 should be added to the current enrollment to allow for unexpected changes in the enrollment.

The number of fields will be determined by the number of

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discrete pieces of information the reading specialist will want to store in each record.

The program must have a report generator capable of producing hard-copy reports. The program should be reasonably easy to learn and easy to use. The program must be compatible with the hardware available.

Many computer journals carry non-technical articles about data management systems. They also carry descriptions and reviews of commercial software.

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Managing an Elementary School Reading Program:
How a Microcomputer Can Help

Edith Einhorn

Figure 2

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READING INSTRUCTIONAL GROUPS

BOOK: WEAVERS
MAGAZINE: 3

	NAME	GR	HOME RM TEACHER	TAG	RR	SLRD	SP	CH1	
1	BR)N, ANIKA	4	CA 'ER						
2	CA)E, ALETTA	4	CA 'ER						CLIT
3	DE RTT, KEVIN	4	CA 'ER						
4	GA RT, JAMES	5	BU S						
5	MA N, KIMBERLY	4	CA 'ER						
6	PO R, TARSHIA	4	CA 'ER						
7	SA , TINA	4	CA ER			W			
8	SH AN, PAUL	4	CA ER						
9	WA NGTON, JOVERNA	5	BU S						ASP
10	WY SERRAN	4	CA ER					Y	
11	YA OUGH, ALBERTINA	4	CA ER						

3
WEAVERS

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R = RETAINED IN GRADE Y = YES W = WATCH

Note: Names of students and teachers have been partially deleted to protect their privacy.

Figure 3

04-02-85 RESOURCE ROOM STUDENTS PAGE 1

DISTRICT HEIGHTS ELEMENTARY SCHOOL

	NAME	GR	TEACHER	READING BOOK
1	FL IER, CHARLIE	1	JO :S	EXPLORING
2	TH SON, TIENISA	1	HI :S	HONEYCOMB
3	WO . NELSON	1	HI :S	HONEYCOMB
4	PR E, NAKITA	1	BU IN	GRTR
	1			
1	HA ELL, JOHN	2	MA :R	REACH. HI'ER
2	NO S, KIMBRA	2	MA :R	JUMPING UP
3	JA ON, ADONIES	2	RO AND	HONEYCOMB
4	SA , THOMAS	2	RO AND	SUNBURST
	2			
1	FL IER, MARK	3	BU: EY	SPINNERS
2	HE RT, ROBERT	3	BU: EY	HONEYCOMB
3	RE LDS, ALLEN	3	BU :EY	SUNBURST
4	CO Y, JOHNNY	3	DR 'ER	HONEYCOMB
5	WI :RSON, TONYA	3	DR 'ER	HONEYCOMB
	3			
1	CH MS, NATASHA	4	CA ER	SPINNERS
2	DU 1, EMMANUEL	4	CA 'ER	SPINNERS
3	IS , MAURICE	4	CA 'ER	TAPESTRY
4	PO L, DARRETT	4	CA ER	SPINNERS
5	CH S, CARLETHA	4	HA...ELL	
	4			
1	BR N, FATIMA	5	CH .ER	TAPESTRY
2	HE RT, PAULA	5	CH .ER	TAPESTRY
3	LE , CHARLES	5	CH .ER	WEAVERS
4	MC Y, CHARLES	5	CH .ER	WEAVERS
5	TH S, DENISE	5	CH .ER	TAPESTRY
6	WA N, MICHAEL	5	CH .ER	WEAVERS
	5			
1	BO ICK, TYROME	6	BU K	GATEWAYS
2	GI ON, ANTHONY	6	BU K	GATEWAYS
3	MU HY, LISA	6	BU K	GATEWAYS
4	OL 'ER, JOHN	6	BU K	GATEWAYS

Note: Names of students and teachers have been partially deleted to protect their privacy.

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Figure 4

04-02-85 READING PROGRESS REPORT PAGE 1 of 10

DISTRICT HEIGHTS ELEMENTARY SCHOOL
SEPTEMBER (OR DATE OF ENTRY) TO DATE OF REPORT

	NAME	GR	L.A. TEACHER	SEPTEMBER BOOK	MAG	CURRENT BOOK	MAG
1	AL N, AMY	1	JO S	STARTING OUT	1	EXPLORING	1
2	AN RSON, TOMMIE	1	JO S	STARTING OUT	1	EXPLORING	1
3	BA ER, KITT	1	JO S	STARTING OUT	2	STARTING OUT	1
4	BI INGS, STEPHANIE	1	JO S	STARTING OUT	1	STARTING OUT	1
5	BR DON, PATRIA	1	JO S	STARTING OUT	1	EXPLORING	1
6	CH S, LA TOYA	1	JO S	STARTING OUT	1	EXPLORING	1
7	DE LLIP, DONNA	1	JO S	STARTING OUT	1	EXPLORING	1
8	DU T, DEQUAIN	1	JO S	STARTING OUT	1	EXPLORING	1
9	FL ER, CHARLIE ANGEL	1	JO S	STARTING OUT	1	EXPLORING	1
10	FO N, KATRINA	1	JO S	ROCKETS		HONEYCOMB	3
11	GA S, MICHAEL	1	JO S	STARTING OUT	1	EXPLORING	1
12	HA , SHAWN	1	JO S	STARTING OUT	1	EXPLORING	1
13	HA SHONDELL	1	JO S	STARTING OUT	1	EXPLORING	1
14	JO N, TYRA	1	JO S	ROCKETS		HONEYCOMB	3
15	LO ROBERT	1	JO S	STARTING OUT	1	STARTING OUT	1
16	OU TTE, BETHANN	1	JO S	ROCKETS		HONEYCOMB	3
17	PA . MATTHEW	1	JO S	STARTING OUT	1	EXPLORING	1
18	PO , SABRINA	1	JO S	STARTING OUT	1	EXPLORING	1
19	RO SON, KELTON	1	JO S	STARTING OUT	1	EXPLORING	1
20	TA , STEVEN	1	JO S	STARTING OUT	1	EXPLORING	1
21	WA , SHAUNIQUE	1	JO S	ROCKETS		HONEYCOMB	3
22	WI MS, TASHA	1	JO S	STARTING OUT	1	EXPLORING	1
23	WI , (ELNORA) MARIE	1	JO S	ROCKETS		HONEYCOMB	3
24	WO VERONICA	1	JO S	STARTING OUT	1	EXPLORING	1
25	BA . MICHAEL	1	HI S	GRTR	1	FOOTPRINTS	
26	BA TT, JULIA	1	HI S	GRTR	1	FOOTPRINTS	
27	BR . DESIREE	1	HI S	ROCKETS		HONEYCOMB	2
28	DA . KIERON	1	HI S	SURPRISES		HONEYCOMB	2
29	DU GTON, SHEMEAKA	1	HI S	SURPRISES		HONEYCOMB	2
30	FE , DAVON	1	HI S	ROCKETS		HONEYCOMB	2
31	GO N, CHANELLE	1	HI S	SURPRISES		HONEYCOMB	2
32	HU REYS, MICHELLE	1	HI S	ROCKETS		HONEYCOMB	2
33	HU NKHEL, OMED	1	HI S	ROCKETS		HONEYCOMB	2
34	MU AD, AQUEELAH	1	HI S	ROCKETS		HONEYCOMB	2
35	MU , TONYA	1	HI S	GRTR	1	FOOTPRINTS	
36	NO , JASON	1	HI S	GRTR	1	FOOTPRINTS	
37	PI , ROBERT	1	HI S	ROCKETS		FOOTPRINTS	
38	QU . MELINDA	1	HI S	ROCKETS		HONEYCOMB	2
39	RO ND, RAYMOND	1	HI S	GRTR	1	FOOTPRINTS	
40	SC IE, MELISSA	1	HI S	ROCKETS		FOOTPRINTS	
41	SC . DERWIN	1	HI S	ROCKETS		HONEYCOMB	2
42	SI TON, KEISHA	1	HI S	ROCKETS		HONEYCOMB	2
43	TA Y, KEISHA	1	HI S	SURPRISES		HONEYCOMB	2
44	TH SON, MICHAEL	1	HI S	ROCKETS		HONEYCOMB	2
45	TH SON, TIENISA	1	HI S	ROCKETS		HONEYCOMB	2
46	TIL N, THOMAS	1	HI S	GRTR	1	FOOTPRINTS	

Note: Names of students and teachers have been partially deleted to protect their privacy.

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